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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/933,762

08/22/2001

Shinichi Tochihara

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03/06/2003

FITZPATRICK CELLA HARPER & SCINTO
30 ROCKEFELLER PLAZA
NEW YORK, NY 10112

EXAMINER

SHAH, MANISH S

ART UNIT

PAPER NUMBER

2853

DATE MAILED 03/06/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/933,762

Applicant(s)

TOCHIHARA ET AL

Examiner

Manish S. Shah

Art Unit

2853

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED. (35 U.S.C. § 133)
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 January 2003.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1, 3-5 & 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kato et al. (# 5538549) in view of Tanuma et al. (# 6166122).

Kato et al. discloses an ink jet recording method and system, which employs an ink jet recording apparatus, which ejects the ink composition on the image-receiving layer (column: 2, line: 44-66). They also disclose that the ink employ in recording using pigmented coloring material, a resin in an aqueous medium (column: 3, line: 5-60). They also disclose that the ink of plural colors of at least cyan, magenta and yellow are used as the pigmented ink (column: 3, line: 5-30). They also disclose that the particle diameter of the pigment substantially fall within the range from 0.05 to 0.3 μm , and the proportion of pigment particles having a particle diameter of 0.05 to 0.3 μm is at most 30% based on the total number of particles of the pigment (column: 2, line: 1-5), and the resin contained in the pigment ink is within a range of from 1-10% by weight (column: 4, line: 3-10). They also disclose that the recording is done on copy paper (L type paper, which is porous) (column: 9, line: 39-43).

Kato et al. differs from the claim of the present invention in that the ink receiving layer of the recording medium is a porous layer comprises alumina hydrate and a resin binder on a base material and has a pore volume ranging from 0.1 to 1.0 ml/g and the ink receiving layer has a thickness of at least 15 μm .

Tanuma et al. teaches that the ink receiving layer of the recording medium is a porous layer (column: 2, line: 15-20) comprises alumina hydrate and a polymerizable binder (resin binder) on a base material (column: 2, line: 5-20; column: 4, line: 15-25) and has a pore volume ranging from 0.3 to 2.0 ml/g (column: 3, line: 43-47) and has a the ink receiving layer has a thickness of at least 20 μm (column: 3, line: 50-60, column: 4, line: 37-41).

It would have been obvious to one of ordinary skill in the art at the time of invention was made to incorporate the porous ink receiving layer taught by the Tanuma et al. into the ink jet recording method and system of Kato et al. because it has a high ink absorbency rate and transparency, and it gives the high color density, good light-fastness and good water-fastness printed image (column: 3, line: 50-65).

2. Claims 2 & 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kato et al. (# 5538549), Tanuma et al. (# 6166122) as applied to claims 1, 3-5 & 7-9 above, and further in view of Kondo et al. (# 6000794).

Kato et al. and Tanuma et al. teaches all the limitation of ink jet recording method and system except that the ink receiving layer has a BET specific surface area within a range of from 20 to 450 m^2/g .

Kondo et al. teaches that to get the high color density and the high ink absorptivity ink-receiving layer has a BET specific surface area within a range of from 20 to 300 m²/ml (m²/g) (column: 6, line: 55-65).

It would have been obvious to one of ordinary skill in the art at the time of invention was made to incorporate the ink receiving layer with specific surface area taught by the Kondo et al. into the ink jet recording method and system of Kato et al. because it gives a high ink absorbency rate and it gives the high color density printed image (column: 6, line: 60-65).

Response to Arguments

3. Applicant's arguments with respect to claims 1-9 have been considered but are moot in view of the new ground(s) of rejection.

Applicant argued that Kato et al. didn't teach the ink-receiving layer as a thickness of at least 15 μ m and ink-receiving layer is a porous structure. Kato et al. teaches that use L type recording paper is used in printing method. Kusumoto et al. (#5619315) teaches that the L type of paper is a ordinary paper, and ordinary paper can be consider as a porous recording medium (column: 8, line: 53-63), so Kato recording medium can be replace by any porous recording medium. Tanuma et al. teaches that the ink receiving layer of the recording medium is a porous layer (column: 2, line: 15-20) comprises alumina hydrate and a polymerizable binder (resin binder) on a base material (column: 2, line: 5-20; column: 4, line: 15-25) and has a pore volume ranging from 0.3 to

2.0 ml/g (column: 3, line: 43-47) and has the ink receiving layer has a thickness of at least 15 μm (column: 3, line: 50-60; column: 4, line: 37-41). So it would have been obvious to one of ordinary skill in the art to use the recording material of Tanuma et al. in to the ink jet recording method of Kato et al, and it has a high ink absorbency rate and transparency, and it gives the high color density, good light-fastness and good water-fastness printed image (column: 3, line: 50-65).

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

(1) Sekiguchi (# 6485812) discloses the ink jet recording sheet has a support and ink receiving layer with inorganic particle and binder resin (see Abstract), wherein inorganic particles are alumina hydrate and binder is a polymer latex and alkyd resin (column: 9, line: 45-60; column: 12, line: 1-20). They also disclose that the alumina hydrate has a pore volume within the range from 0.1 to 1.2 ml/g and surface area is within the range from 70 to 300 m^2/g (column: 9, line: 45-60).

(2) Yoshino et al. (# 5962124) discloses the ink jet recording sheet has a support and ink-receiving layer with inorganic particle and binder resin (see Abstract), wherein inorganic particles are alumina hydrate and binder is a polymer latex and alkyd resin (column: 9, line: 35-40; column: 12, line: 1-20). They also disclose that the alumina

hydrate has a pore volume within the range from 0.1 to 0.6 ml/g (column: 10, line: 28-32) and surface area is within the range from 70 to 300 m²/g (column: 7, line: 5-10).

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Manish S. Shah whose telephone number is (703) 305-1562. The examiner can normally be reached on 7:00am-3:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John E. Barlow, Jr. can be reached on (703) 308-3126. The fax phone numbers for the organization where this application or proceeding is assigned are (703)

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308-7724 for regular communications and (703) 308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 305-4900



MSS
February 27, 2003


CRAIG HALLACHER
PRIMARY EXAMINER